

Table 4-1. Gross alpha, gross beta, tritium, and radium analysis results for offsite wells in 2004

Monitoring Location	Date Sampled	Gross $\alpha \pm$ Uncertainty ^(a) (MDC) (pCi/L) ^(b)	Gross $\beta \pm$ Uncertainty (MDC) (pCi/L) ^(c)	$^3\text{H} \pm$ Uncertainty (MDC) (pCi/L) ^(d)	$^{226}\text{Ra} \pm$ Uncertainty (MDC) (pCi/L) ^(e)	$^{228}\text{Ra} \pm$ Uncertainty (MDC) (pCi/L) ^(e)
Beatty Water And Sewer	12/1/2004	15 \pm 2.7 (1.2)	9.9 \pm 2.1 (2.1)	5.9 \pm 15 (25)	0.018 \pm 0.12 (0.24)	-0.068 \pm 0.40 (0.87)
Beatty Water And Sewer FD ^(f)	12/1/2004	14 \pm 2.6 (1.1)	11 \pm 2.2 (2.2)	6.1 \pm 15 (25)	-0.032 \pm 0.11 (0.24)	0.32 \pm 0.41 (0.81)
Crystal Trailer Park	12/1/2004	2.8 \pm 0.90 (1.1)	6.8 \pm 1.6 (1.8)	11 \pm 15 (25)	0.038 \pm 0.15 (0.29)	0.34 \pm 0.40 (0.80)
ER-OV-02	9/27/2004	45 \pm 7.7 (1.6)	48 \pm 8.1 (3.4)	-5.9 \pm 11 (19)	NA	NA
ER-OV-02 FD	9/27/2004	51 \pm 8.7 (1.9)	40 \pm 7.0 (3.7)	NA ^(g)	NA	NA
ER-OV-03A	9/28/2004	6.9 \pm 1.4 (0.78)	7.1 \pm 1.5 (1.4)	-6.9 \pm 12 (21)	NA	NA
ER-OV-03A FD	9/28/2004	7.4 \pm 1.5 (0.73)	7.2 \pm 1.6 (1.7)	NA	NA	NA
ER-OV-03A3	9/29/2004	8.3 \pm 1.6 (0.85)	7.8 \pm 1.6 (1.5)	-9.0 \pm 12 (21)	NA	NA
ER-OV-03C	9/28/2004	8.4 \pm 1.6 (0.64)	7.4 \pm 1.4 (1.1)	-7.2 \pm 13 (22)	NA	NA
ER-OV-03C2	9/28/2004	5.7 \pm 1.1 (0.62)	4.6 \pm 1.0 (1.1)	7.8 \pm 13 (21)	NA	NA
ER-OV-04A	9/27/2004	7.9 \pm 1.6 (1.0)	17 \pm 3.0 (1.9)	-11 \pm 12 (22)	NA	NA
ER-OV-05	9/27/2004	6.1 \pm 1.4 (1.1)	15 \pm 2.9 (2.2)	-4.8 \pm 13 (22)	NA	NA
PM-3	5/25/2004	3.3 \pm 0.85 (0.78)	17 \pm 2.9 (1.5)	20 \pm 12 (18)	NA	NA
PM-3 FD	5/25/2004	NA	NA	17 \pm 12 (18)	NA	NA
Roger Bright Ranch	12/1/2004	2.5 \pm 1.0 (1.4)	14 \pm 2.9 (2.6)	8.9 \pm 15 (24)	0.10 \pm 0.12 (0.18)	0.49 \pm 0.45 (0.87)
School Well	12/1/2004	1.6 \pm 0.53 (0.58)	8.6 \pm 1.7 (1.4)	3.0 \pm 15 (25)	0.036 \pm 0.090 (0.17)	0.18 \pm 0.43 (0.90)
Tolicha Peak	12/1/2004	2.6 \pm 0.68 (0.67)	5.0 \pm 1.1 (1.2)	10 \pm 15 (25)	0.19 \pm 0.15 (0.16)	0.22 \pm 0.43 (0.89)
U.S. Ecology	12/1/2004	4.4 \pm 1.2 (1.1)	11 \pm 2.5 (2.8)	11 \pm 16 (26)	0.063 \pm 0.13 (0.23)	0.20 \pm 0.38 (0.78)

Green shaded results are considered detected (result is greater than the sample specific MDC)

Yellow shaded results are any which are equal to or greater than the EPA-designated levels shown below for each analyte:

(a) ± 2 standard deviations

(b) The EPA established MCL in drinking water for gross alpha (α) is 15 pCi/L

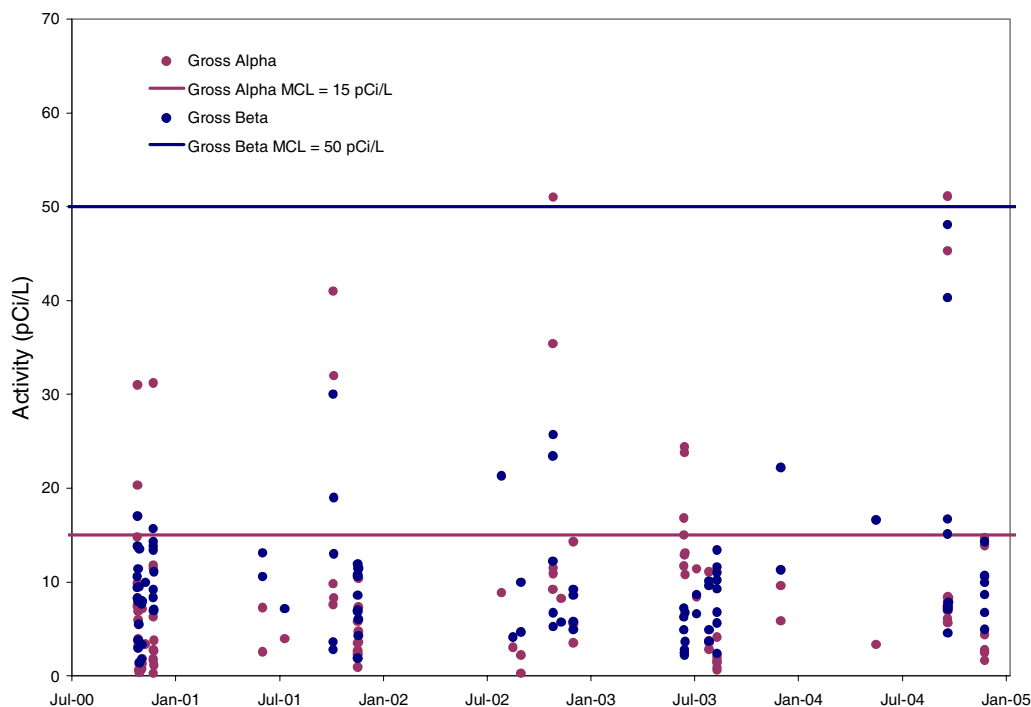
(c) The EPA "Level of Concern" in drinking water for gross beta (β) is 50 pCi/L

(d) The EPA established MCL in drinking water for tritium (^3H) is 20,000 pCi/L

(e) The EPA established MCL in drinking water for ^{226}Ra and ^{228}Ra combined is 5 pCi/L

(f) FD = field duplicate sample

(g) NA = Specific analysis was not run on the sample

**Figure 4-4. Gross alpha and gross beta levels in offsite wells from 2000 to 2004**

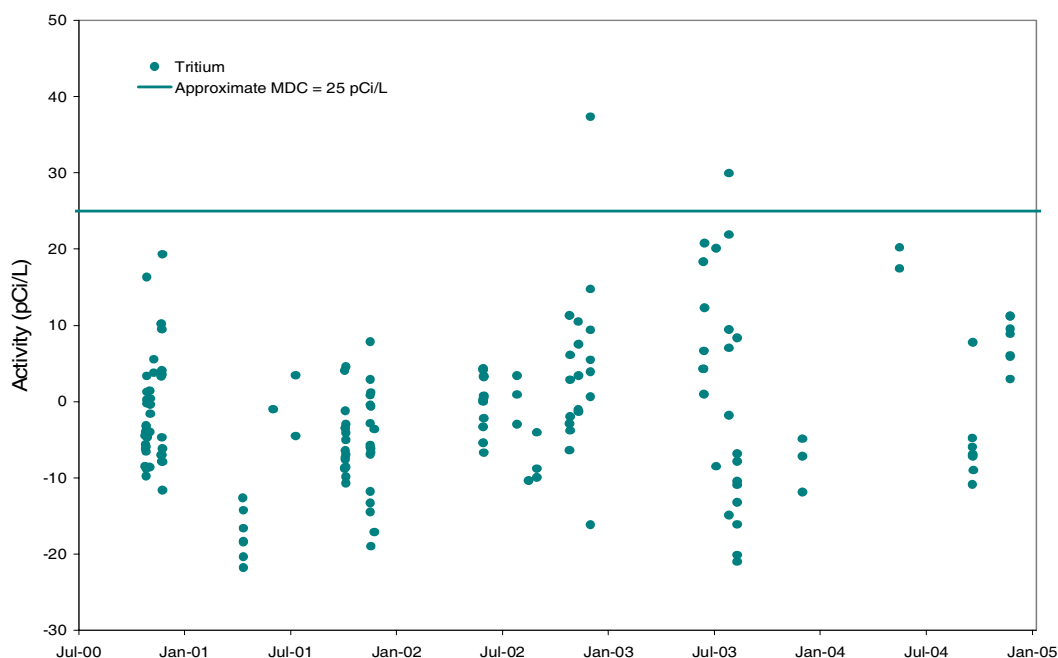


Figure 4-5. Tritium concentrations in offsite wells from 2000 to 2004

4.1.5 Results from Offsite Springs

Two offsite springs, Spicer Ranch Spring and Revert Spring, were sampled in 2004. Both springs are near Beatty, Nevada. Detectable concentrations of gross alpha and gross beta were present in water collected from the springs, although their concentrations were below the EPA MCL for drinking water (Table 4-2). The measurable gross alpha and gross beta radioactivity is likely from natural sources.

No detectable concentrations of tritium were found in any of the samples (Table 4-2). ^{226}Ra and ^{228}Ra measurements indicate that radium is not a significant contributor to the gross alpha activity.

No man-made gamma-emitting radionuclides were detected.

Among the seven offsite springs that have been sampled at least once since 1999, there are no detectable trends in gross alpha or gross beta activity (Figure 4-6), or in tritium concentrations (Figure 4-7) from 2000 to 2004. Alpha and beta levels have all been below the EPA MCL for drinking water, and tritium concentrations have all been below the MDC.

Table 4-2. Gross alpha, gross beta, tritium, and radium analysis results for offsite springs in 2004

Monitoring Location	Date Sampled	Gross α \pm Uncertainty (MDC) ^(a) (pCi/L) ^(b)	Gross β \pm Uncertainty (MDC) (pCi/L) ^(c)	^3H \pm Uncertainty (MDC) (pCi/L) ^(d)	^{226}Ra \pm Uncertainty (MDC) (pCi/L) ^(e)	^{228}Ra \pm Uncertainty (MDC) (pCi/L) ^(e)
Revert Spring	12/1/2004	4.1 \pm 1.0 (0.87)	4.8 \pm 1.5 (2.1)	-7.8 \pm 14 (25)	0.71 \pm 0.30 (0.21)	0.15 \pm 0.46 (0.96)
Revert Spring FD ^(f)	12/1/2004	NA ^(g)	NA	5.7 \pm 15 (24)	NA	NA
Spicer Ranch	12/1/2004	6.2 \pm 1.4 (1.1)	8.3 \pm 1.9 (2.0)	6.7 \pm 15 (25)	0.92 \pm 0.40 (0.36)	-0.050 \pm 0.40 (0.86)

Green shaded results are considered detected (result is greater than the sample specific MDC)

(a) ± 2 standard deviations

(b) The EPA established MCL in drinking water for gross alpha (α) is 15 pCi/L

(c) The EPA "Level of Concern" in drinking water for gross beta (β) is 50 pCi/L

(d) The EPA established MCL in drinking water for tritium (^3H) is 20,000 pCi/L

(e) The EPA established MCL in drinking water for ^{226}Ra and ^{228}Ra combined is 5 pCi/L

(f) FD = field duplicate sample

(g) NA = Specific analysis was not run on the sample